

MATERIALS LICENSE

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 36, 39, 40, and 70, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations, and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

<p style="text-align: center;">Licensee</p> <p>1. United States Department of Agriculture Office of Human Resources Management Safety and Health Management Division Radiation Safety Staff</p> <p>2. Mailstop 5510 5601 Sunnyside Avenue Beltsville, Maryland 20705-1500</p>	<p>In accordance with the letter dated April 10, 2000,</p> <p>3. License number 19-00915-03 is amended in its entirety to read as follows:</p> <hr/> <p>4. Expiration date September 30, 2005</p> <hr/> <p>5. Docket No. 030-04530 Reference No.</p>	
<p>6. Byproduct, source, and/or special nuclear material</p> <p>A. Any byproduct material with atomic numbers 1 through 83 and a half-life less than or equal to 120 days</p> <p>B. Any byproduct material with atomic numbers 1 through 83 and a half-life greater than 120 days</p> <p>C. Any byproduct material with atomic numbers 1 through 83</p> <p>D. Hydrogen 3</p> <p>E. Iron 55</p> <p>F. Nickel 63</p> <p>G. Cadmium 109</p> <p>H. Cesium 137</p>	<p>7. Chemical and/or physical form</p> <p>A. Any, except sealed sources</p> <p>B. Any, except sealed sources</p> <p>C. Sealed sources</p> <p>D. Plated sources or foils</p> <p>E. Sealed sources</p> <p>F. Plated sources or foils</p> <p>G. Sealed sources</p> <p>H. Sealed sources</p>	<p>8. Maximum amount that licensee may possess at any one time under this license</p> <p>A. As needed</p> <p>B. See Condition 12</p> <p>C. Not to exceed 250 millicuries per source and 10 curies total</p> <p>D. Not to exceed 1 curie per source and 4 curies total</p> <p>E. Not to exceed 15 millicuries per source and 150 millicuries total</p> <p>F. Not to exceed 20 millicuries per source and 4 curies total</p> <p>G. Not to exceed 50 millicuries per source and 1 curie total</p> <p>H. Not to exceed 15 millicuries per source and 20 curies total</p>

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**License Number
19-00915-03Docket or Reference Number
030-04530

Amendment No. 117

- | | | |
|---|--|--|
| 6. Byproduct, source, and/or special nuclear material | 7. Chemical and/or physical form | 8. Maximum amount that licensee may possess at any one time under this license |
| I. Americium 241 | I. Sealed sources | I. Not to exceed 1.050 curies per source and 20 curies total |
| J. Curium 244 | J. Sealed sources | J. Not to exceed 50 millicuries per source and 100 millicuries total |
| K. Californium-252 | K. Sealed sources | K. Not to exceed 0.2 millicuries per source and 2 millicuries total |
| L. Any byproduct material identified in 10 CFR 35.100 | L. Any radiopharmaceutical identified in 10 CFR 35.100 | L. As needed |

9. Authorized use:

- A. through K. Research and development as defined in 10 CFR 30.4 including animal studies; in gauging and measuring devices and in field studies.
- L. Studies on human research subjects as approved by a Radioactive Drug Research Committee (RDRC) that has been approved by the Food and Drug Administration (FDA).

CONDITIONS

10. Licensed material may be used at locations and facilities of the U.S. Department of Agriculture and at temporary job sites of the licensee anywhere in the United States, as authorized by the licensee's Radiation Safety Committee, except that licensed material for research studies in humans shall not be used on the premises of a medical institution licensed pursuant to Section 35.11 of 10 CFR Part 35 or equivalent regulations of an Agreement State.
11. A. Licensed material shall be used by, or under the supervision of, individuals designated in writing by the Radiation Safety Committee, Arthur L. Schipper, Ph.D., Chairman.
- B. The use of licensed material in or on humans shall be by a physician, dentist, or podiatrist as defined in 10 CFR 35.2.

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**License Number
19-00915-03Docket or Reference Number
030-04530

Amendment No. 117

- C. Individuals designated in writing to work as authorized users as defined in 10 CFR 35.2, shall meet the training and experience criteria established in 10 CFR Part 35, Subpart J and shall be designated by the licensee's Radiation Safety Committee.
- D. The Radiation Safety Officer for this license is John T. Jensen.
12. If only one radionuclide is possessed, the possession limit is the quantity which is less than or equal to 10^5 times the applicable quantity specified for that radionuclide in Appendix B to 10 CFR Part 30. If two or more radionuclides are possessed, the possession limit is determined as follows: For each radionuclide, determine the ratio of the quantity possessed to 10^5 times the applicable quantity specified for that radionuclide in Appendix B to 10 CFR Part 30. The sum of the ratios for all radionuclides possessed under the license shall not exceed unity.
13. In addition to the possession limits in Item 8, the licensee shall further restrict the possession of licensed material at a single location to quantities below the limits specified in 10 CFR 30.72 which require consideration of the need for an emergency plan for responding to a release of licensed material.
14. Licensed material shall not be used in or on human beings except as provided otherwise by specific conditions of this license.
15. The licensee shall possess and use byproduct material for "medical use", as defined in 10 CFR 35.2, in accordance with the prescriptive and performance criteria in all sections of 10 CFR Part 35 applicable to human research subjects and the uses listed in 10 CFR 35.100.
16. The licensee shall not use licensed material in field applications where activity is released except as provided otherwise by specific condition of this license.
17. Experimental animals, or the products from experimental animals, that have been administered licensed materials shall not be used for human consumption.
18. A. Sealed sources and detector cells containing licensed material shall be tested for leakage and/or contamination at intervals not to exceed six months or at such other intervals as are specified by the certificate of registration referred to in 10 CFR 32.210, not to exceed three years.
- B. Notwithstanding Paragraph A of this Condition, sealed sources designed to emit alpha particles shall be tested for leakage and/or contamination at intervals not to exceed three months.
- C. In the absence of a certificate from a transferor indicating that a leak test has been made within six months prior to the transfer, a sealed source or detector cell received from another person shall not be put into use until tested.

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**License Number
19-00915-03Docket or Reference Number
030-04530

Amendment No. 117

- D. Each sealed source fabricated by the licensee shall be inspected and tested for construction defects, leakage, and contamination prior to any use or transfer as a sealed source.
- E. Sealed sources and detector cells need not be leak tested if:
- (i) they contain only hydrogen-3; or
 - (ii) they contain only a radioactive gas; or
 - (iii) the half-life of the isotope is 30 days or less; or
 - (iv) they contain not more than 100 microcuries of beta and/or gamma emitting material or not more than 10 microcuries of alpha emitting material; or
 - (v) they are not designed to emit alpha particles, are in storage, and are not being used. However, when they are removed from storage for use or transfer to another person, and have not been tested within the required leak test interval, they shall be tested before use or transfer. No sealed source or detector cell shall be stored for a period of more than 10 years without being tested for leakage and/or contamination.
- F. The test shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample. If the test reveals the presence of 0.005 microcurie or more of removable contamination, a report shall be filed with the U.S. Nuclear Regulatory Commission and the source or detector cell shall be removed immediately from service and decontaminated, repaired, or disposed of in accordance with Commission regulations. The report shall be filed within five days of the date the leak test result is known with the U.S. Nuclear Regulatory Commission, Region I, ATTN: Chief, Nuclear Materials Safety Branch, 475 Allendale Road, King of Prussia, Pennsylvania 19406. The report shall specify the source or detector cell involved, the test results, and corrective action taken.
- G. The licensee is authorized to collect leak test samples for analysis by the licensee. Alternatively, tests for leakage and/or contamination may be performed by persons specifically licensed by the Commission or an Agreement State to perform such services.
19. Sealed sources or detector cells containing licensed material shall not be opened or sources removed from source holders by the licensee.
20. The licensee shall not acquire licensed material in a sealed source or device unless the source or device has been registered with the U.S. Nuclear Regulatory Commission pursuant to 10 CFR 32.210 or equivalent regulations of an Agreement State.
21. The licensee shall conduct a physical inventory every six months to account for all sealed sources and devices containing licensed material received and possessed under the license.
22. A. Detector cells containing a titanium tritide foil or a scandium tritide foil shall only be used in

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**License Number
19-00915-03Docket or Reference Number
030-04530

Amendment No. 117

conjunction with a properly operating temperature control mechanism which prevents the foil temperatures from exceeding that specified in the certificate of registration referred to in 10 CFR 32.210.

- B. When in use, detector cells containing a titanium tritide foil or a scandium tritide foil shall be vented to the outside.
23. Each portable nuclear gauge shall have a lock or outer locked container designed to prevent unauthorized or accidental removal of the sealed source from its shielded position. The gauge or its container must be locked when in transport, storage or when not under the direct surveillance of an authorized user.
24. Any cleaning, maintenance, or repair of the gauge(s) that requires removal of the source rod shall be performed only by the manufacturer or by other persons specifically licensed by the Commission or an Agreement State to perform such services.
25. The licensee is authorized to hold radioactive material with a physical half-life of less than or equal to 120 days for decay-in-storage before disposal in ordinary trash, provided:
- A. Waste to be disposed of in this manner shall be held for decay a minimum of ten half-lives.
- B. Before disposal as ordinary trash, the waste shall be surveyed at the container surface with the appropriate survey instrument set on its most sensitive scale and with no interposed shielding to determine that its radioactivity cannot be distinguished from background. All radiation labels shall be removed or obliterated.
- C. A record of each such disposal permitted under this License Condition shall be retained for three years. The record must include the date of disposal, the date on which the byproduct material was placed in storage, the radionuclides disposed, the survey instrument used, the background dose rate, the dose rate measured at the surface of each waste container, and the name of the individual who performed the disposal.
26. Radioactive waste generated shall be stored in accordance with the statements, representations, and procedures included with the waste storage plan described in the licensee's application dated October 17, 1994.
27. Pursuant to 10 CFR 20.1302 and 20.2004 the licensee is authorized to dispose of licensed material by incineration provided the gaseous effluent from incineration does not exceed the limits specified for air in Appendix B, Table 2, 10 CFR Part 20. The licensee is authorized to utilize the incinerators at the locations specified in Section 11.2 of the licensee's application dated October 17, 1994.

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**License Number
19-00915-03Docket or Reference Number
030-04530

Amendment No. 117

28. Pursuant to 10 CFR 20.2002, the licensee may dispose of incinerator ash containing radioactive materials with Atomic Nos. 1 through 83, except the radionuclides identified below, as ordinary waste in a landfill provided the concentration of the radionuclides (in microcuries per gram of ash) at the time of disposal are no greater than the values in Table II, Column 2, 10 CFR Part 20, Appendix B. For hydrogen-3, carbon-14, aluminum-26, chlorine-36, silver-108m, niobium-94, iodine-129, technetium-99, and thallium-204, the concentration can be no greater than one-tenth of the value in Table II, Column 2, 10 CFR Part 20, Appendix B.
29. The licensee shall maintain control of each site where it disposed of radioactive material by burial and shall monitor the Beltsville burial site in accordance with letter dated July 2, 1992. No additional burials of radioactive material are authorized by this license.
30. The licensee is authorized to transport licensed material in accordance with the provisions of 10 CFR Part 71, "Packaging and Transportation of Radioactive Material."
31. On or before June 30, 1999, the licensee shall submit to the NRC a draft work plan described in the letter dated September 3, 1998 for remediation of the radioactive waste burial site at the Beltsville Agriculture Research Center in Beltsville, Maryland. The plan shall be submitted to the U.S. Nuclear Regulatory Commission, Region I, 475 Allendale Road, King of Prussia, Pennsylvania 19406, ATTN: Director, Division of Nuclear Materials Safety.
32. Notwithstanding the requirements of 10 CFR 30.36(d), the licensee is not required to notify the NRC that the licensee has decided to cease principal activities at an entire site if:
- The licensed material used at the site was only in the form sealed sources; and
 - The total activity used at the site did not, at any time, exceed one curie; and
 - All sealed sources to be removed from the site have been leak tested within the six months prior to their removal date;
 - No leak test of any source, performed while the source was possessed at the site, revealed the presence of 0.005 microcurie or more of removable contamination; and
 - The licensee maintains documentation indicating the location and dates of licensed material usage.

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**License Number
19-00915-03Docket or Reference Number
030-04530

Amendment No. 117

33. Except as specifically provided otherwise in this license, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents, including any enclosures, listed below. The Nuclear Regulatory Commission's regulations shall govern unless the statements, representations, and procedures in the licensee's application and correspondence are more restrictive than the regulations.

- A. Letter dated July 2, 1992 with enclosures
- B. Application dated October 17, 1994
- C. Letter received June 23, 1995
- D. Letter dated February 19, 1991
- E. Letter dated November 27, 1995
- F. Letter dated June 3, 1996
- G. Letter dated March 19, 1999
- H. Letter dated June 16, 1999
- I. Letter dated April 10, 2000

For the U.S. Nuclear Regulatory Commission

Date April 28, 2000By ***Original signed by Keith D. Brown***

Keith D. Brown
Nuclear Materials Safety Branch 2
Division of Nuclear Materials Safety
Region I
King of Prussia, Pennsylvania 19406